

REMARKS

As of the 17 November 2008 *Office Action*, Claims 15-27 are pending in the Application. In the *Office Action*, the Examiner rejects all pending claims. Applicant thanks the Examiner with appreciation for the careful consideration and examination given to the Application. By this *Response*, Applicant amends certain claims to clarify some of the currently claimed embodiments. No new matter is believed introduced in this submission as at least ¶ [0063] of the *Specification* fully supports the clarifying amendments.

Applicant submits this *Response* solely to facilitate prosecution. As such, Applicants reserve the right to present new or additional claims in this Application that have similar or broader scope as originally filed. Applicant also reserves the right to present additional claims in a later-filed continuation application that have similar or broader scope as originally filed. Accordingly, any amendment, argument, or claim cancellation is not to be construed as abandonment or disclaimer of subject matter.

After entry of this *Response*, Claims 15-28 are pending in the Application. Applicant respectfully asserts that the pending claims are in condition for allowance over the references of record, and respectfully requests reconsideration of the claims in light of this submission. Applicant, accordingly, believes that the Application is allowable for the following reasons.

I. Examiner Interview Summary

On 12 February 2008, the undersigned conducted a telephonic interview with the Examiner to discuss the Application. The Applicant and undersigned thank the Examiner for taking the time to discuss the Application. During the interview, the undersigned demonstrated that a reference cited by the Examiner, i.e., Elizabeth M. Royer, “A Review of Current Routing Protocols for Ad Hoc Mobile Wireless Networks,” IEEE Personal Communications, April 1999 (“Royer”), does not disclose a routing protocol that would reveal all possible network paths between a source and destination node. Agreement could not be reached on this point and the Examiner indicated he would consider the argument when presented in writing. The undersigned believes this is a complete and accurate description of the interview and invites the Examiner to supplement this summary if believed necessary.

II. Overview of the Rejections under 35 U.S.C. §103

Claims 15-25 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,124,806 to Cunningham et al. (“Cunningham”) in view of Royer and U.S.

Patent No. 5,251,205 to Callon et al. (“Callon”). Claim 26 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Cunningham, Royer, and Callon in further view of prior art allegedly admitted by Applicant. Claim 27 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Cunningham in view of Royer and Callon in further view of Jil A. Westcott, “Issues in Distributed Routing for Mobile Packet Radio Networks”, IEEE, 1982 (“Jil”).

a. Claims 15-22 Are Patentable Over The Cited References

Claim 15 recites features not disclosed in the cited references. In particular, Claim 15 recites generating a network map of all down-stream communication paths from a site controller to a target communication device and all up-stream communication paths from the target communication device to the site controller. Applicant submits that at least this feature is not disclosed in the cited references.

Royer does not disclose a routing protocol capable of determining all possible paths between a controller and destination node. On page 3 of the *Office Action*, the Examiner alleges that Royer’s dynamic source routing is equivalent to the recited network mapping protocol. Applicant respectfully disagrees.

In accordance to Royer’s dynamic source routing protocol, a source node (N1) sends out a route request packet to a destination node (N8) through a network of intermediate nodes (N2-N7). (Royer, Pg. 49, Fig. 4a). The possible paths are sent back to the source node in the form of a route reply. The route replies will come from the destination node and any intermediate node that “contains in its cache an unexpired route to the destination.” (Royer, Pg. 49)

Applicant respectfully submits that based on Royer’s protocol, not all possible paths between the source and destination will be revealed to the source node. For example, the possible path N1-N3-N4-N5-N8 (hereinafter the “13458 Path” may not be determined by Royer’s protocol. A route reply containing the 13458 Path could only come from the destination node itself or an intermediate node in the path. The destination node and intermediate nodes, however, would not generate a route reply containing the 123458 Path.

The destination node would not generate a reply containing the 13458 Path. A route reply from the destination node contains the path that the route request followed to the destination node. A route request, however, would not reach the destination following the 123458 Path. Royer states that “a mobile only forwards the route request if the request has not

yet been seen by the mobile and if the mobile's address does not already appear in the route record." (Royer, Pg. 49). Therefore, N5 would not forward a route request to N8 that it receives through N4 because N5 would have already relayed the route request when it was received through N2. Therefore, a route request would not reach the destination node N8 along the 13458 Path. Consequently, the destination node would not generate a reply route containing the 13458 Path.

Royer fails to disclose that the intermediate nodes in the 13458 Path would generate a reply route containing the 13458 Path. An intermediate node only generates a route reply if that node "contains in its route cache an unexpired route to the destination." (Royer, Pg. 49). Fig. 4 of Royer illustrate that a path along N1-N3-N4-N5-N8 is in fact possible in this particular network layout. Royer does not, however, disclose that any of the intermediate nodes N3, N4, and N5 have stored in their cache an unexpired route to N8.

There are numerous reasons why the intermediate nodes may not have a path to N8 stored in their cache. For example, N8 may be a node newly added to the network with no prior communications with any other node in the network. The intermediate nodes may be new to the network and not have paths stored in their cache. The network may have relatively little traffic and paths to N8 may be old and expired. Because the nodes are mobile, the 13458 Path may have formed recently as the nodes moved within range of each other, hence none of the nodes would have an unexpired path to N8 in their cache that is along the 13458 Path. Indeed, there may be numerous other reasons why the intermediate nodes would not have an unexpired path to N8. Ultimately, Royer does not disclose that any of the intermediate nodes N3, N4, and N5 actually have stored in their cache an unexpired route to N8. Consequently, Royer does not disclose that any of the intermediate nodes N3, N4, and N5 could generate a route reply containing the 13458 Path. For similar reasons, many other possible paths between a source and destination node would never be identified by the Royer protocol. Therefore, the Royer protocol cannot identify all possible paths between a controller and destination node, as recited in Claim 15.

For at least these reasons, the cited references fail to disclose each and every feature recited in Claim 15. Therefore, Applicant respectfully submits that Claim 15 is patentable over the cited references, and in condition for allowance. Further, Claims 16-22 are believed to be allowable due to their ultimate dependence on Claim 15, and further features recited therein.

b. Claims 23-27 Are Patentable Over The Cited References

Claim 23 recites features not disclosed in the cited references. In particular, Claim 23 recites polling remote devices according to a predetermined schedule by transmitting a status message to one or more of the remote device requesting the remote device to transmit a message containing current operating status of the remote device. Applicant submits that at least this feature is not disclosed in the cited references.

Cunningham does not disclose polling as recited in Claim 23. On page 8 of the *Office Action*, the Examiner alleges that in col. 9, lines 9-19 Cunningham disclose polling similar to that as recited in Claim 23. Applicant respectfully disagrees. The passage of Cunningham cited by the Examiner describes polling in a prior art system. The Examiner cannot simply pick and choose disjointed elements scattered throughout the Cunningham reference and propose that Cunningham actually teaches that those elements be used together. None the embodiments of Cunningham's system relied upon by the Examiner include a polling feature. Further, the passage of Cunningham cited by the Examiner does not disclose that the polling is done according to a predetermined schedule or that the device transmits current operating status in response to the poll. Therefore, Applicant respectfully submits that Cunningham fails to disclose polling as recited in the Claim 23.

For at least these reasons, the cited references fail to disclose each and every feature recited in Claim 23. Therefore, Applicant respectfully submits that Claim 23 is patentable over the cited references, and in condition for allowance. Further, Claims 23-27 are believed to be allowable due to their ultimate dependence on Claim 23, and further features recited therein.

c. Claim 28 Is Patentable Over The Cited References

Claim 28 recites features not disclosed in the cited references. In particular, Claim 28 recites "sending a path determination message to each communication device from a site controller through the second communication network prompting each communication device to retransmit the path determination message to the site controller through the second communication network; and generating a map of the entire network from the unique addresses of every communication device that retransmitted each path determination message from the site controller to each communication device or from each communication device to the site controller." Applicant respectfully submits that these features are not disclosed in the cited references for substantially the same reasons as discussed above with regard to Claim 15.

III. Fees

This *Response* is filed within three months of the Final *Office Action* dated 17 November 2008, thus no extension of time fees are believed due. This *Response* does not introduce additional claims beyond those paid for upon filing, thus no claim fees are believed due. Applicant expressly request continued examiner under 37 C.F.R. §1.114 and pays the required fee via Deposit-Account. Should any fees remain due after the filing of this submission, Applicant expressly authorizes the Commissioner to charge deposit account No. 20-1507 for payment of such fees.

CONCLUSION

Applicant respectfully submits that after entry of this *Response* the Application is fully in condition for allowance. The Examiner is invited to contact the undersigned should any other issues remain prior to the allowance of this Application. Early and favorable action is respectfully requested.

Respectfully submitted,

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DATE: 17 February 2009